

Atropine sulfate ophthalmic suspension 0.01% eye drop therapy for myopia control

1) What is it?

- Due to growing concerns about myopia, recent research studies focus on slowing progression of myopia in children.
- Low-dose atropine 0.01% as an effective approach has been highlighted by the Atropine Treatment of Myopia studies (ATOM1 and ATOM2).
- The low-dose atropine is a significant breakthrough in slowing down myopic progression.
- It is an effective treatment with few side effects for most children.

2) Parental Concerns:

- Some parents prefer to wait until the myopia becomes worse before treating their children (However, it is important to take action before the vision becomes worse)
- Parents need to understand the Atropine 0.01% is off-label use, and the local pharmacy will have to make the eye drop
- Instilling the eye drops every night does take time and effort

3) What are the side effects?

- Ocular side effects: low-dose atropine has minimal effects on pupil size, accommodation (focusing at near) and near vision.
- Systemic side effects: Acute side effects- systemic side effects are really rare with 0.01% atropine use.

***Tachycardia, altered mental status, dry mouth, urinary retention, constipation, and flushing skin have been **reported with higher doses of atropine.**

***These side effects **have not been reported in children on low-dose atropine 0.01%**

Late side effects: Long-term side effects would be noted for allergy to arise. Some participants of the ATOM2 study experience allergy-associated dermatitis (less than 1%) or allergic conjunctivitis (3%), no allergic reaction occurred in patients in the 0.01% group.

If an allergy does develop, the drug must be discontinued.

4) Who and When to treat?

- Atropine 0.01% is used to treat children 6 years old to 15 years old, where myopia increases -0.5 D in 6 months time
- A child with -1.0D of myopia or has myopia that changes more than -1.0D in a year.

5) How to treat and how long?

- Treatment regimen requires patients or parents to administer 1 drop of 0.01% atropine daily in each eye
- Time of day does not matter, but most typically in the morning, or before bed time
- 6 months at least, and then monitor for change, and then continue the drop for another 6 months
- Usually at 12 months (1 year check up), find out if myopia has not changed
- If patient continues to progress, continue with atropine therapy up to 2 years